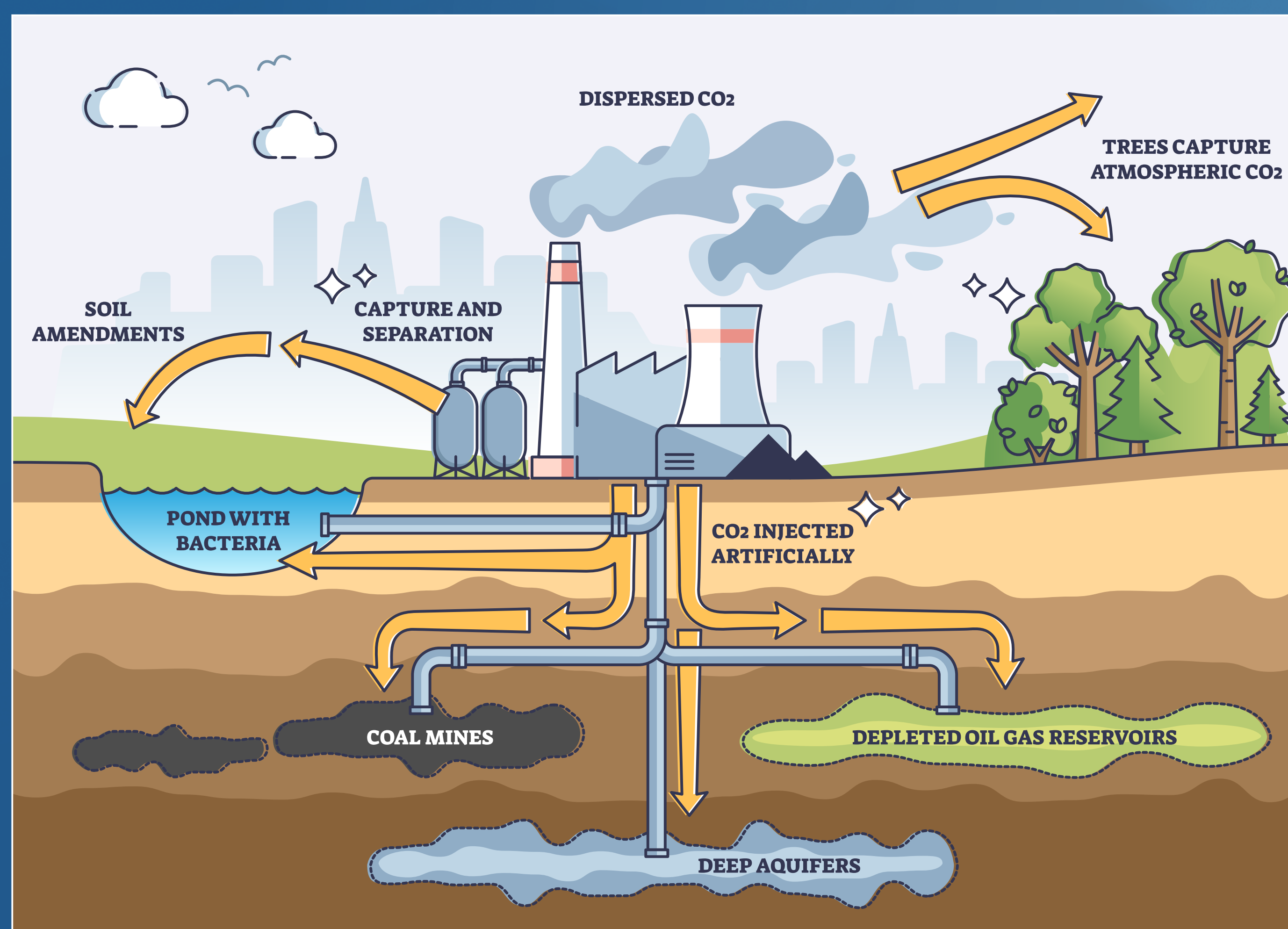


NETL TEAM DEMONSTRATES THAT NANOMATERIALS AND COMPOSITE COATING CAN ENHANCE FIBER OPTIC SENSORS USED FOR DETECTING CARBON DIOXIDE AND METHANE

The new technology can provide safer, quicker and more secure underground storage and pipeline monitoring.



Researchers developed the highly sensitive material that can be used to detect carbon dioxide and methane in ambient environments.

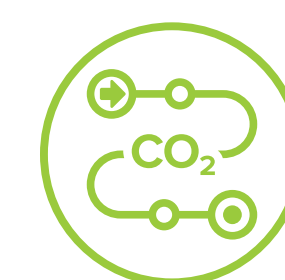
NETL researchers demonstrated how plasmonic nanomaterials and porous polymer composite coating can enhance the ability of optical fiber sensors to detect energy-relevant gases such as carbon dioxide and methane.

- Real-time monitoring of carbon dioxide and methane is needed to assure storage and pipeline infrastructure integrity and to detect early signs of gas leakage.
- Optical fiber sensors offer advantages over other types of sensors because they are small, lightweight, can endure high temperatures and pressures and are immune to electromagnetic interference.
- Early leak detection of greenhouse gases will help to mitigate gas emissions and combat global warming.

RESEARCH PRIORITIES



METHANE MITIGATION



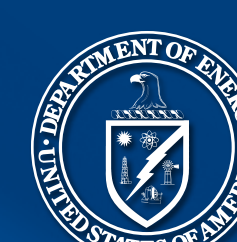
CARBON STORAGE AND TRANSPORT

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